



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/162,103 09/28/98 WINKLER

D 2935/PDC/ICT

EXAMINER

MM91/0112

APPLIED MATERIALS INC
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ART UNIT

PAPER NUMBER

2881

DATE MAILED:

01/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/162,103	WINKLER ET AL.	
	Examiner	Art Unit	
	Kalimah Fernandez	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- | | |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 20) <input type="checkbox"/> Other: |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, and 7- 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No. 5786601 issued to Sturrock. Sturrock teaches an electron lithography machine having a main chamber housing a movable stage (col.4, lines 28-34). Sturrock discloses the capability of evacuating the main chamber by a vacuum system (col. 4, lines 40-54); see figure 1). In addition, Sturrock teaches a mini-column enclosed in a vacuum mini-environment (col.2, lines 23-37; see figure 1). Namely, the spacing between elements (12) and (27) in figure 2 will provide an avenue for the evacuation of the mini-column.
3. Although, Sturrock does not explicitly describe a load lock, however, the recitation of a load lock element is considered inherent. Sturrock discloses vacuum considerations in loading the sample as one of the objective of his invention (col.1, lines

34-39). Commonly, a load lock is a chamber having a lid with a locking mechanism that enables the achievement of a sufficient vacuum environment. Therefore, a load lock is inherently in the Sturrock's teachings.

4. As per claim 4, Sturrock teaches an evacuation outlet denoted numerical (19) in figure 2.

5. As per claim 8, Sturrock discloses said mini-column being mounted to a support means (plate) illustrated in Figure 2 and denoted by numerical (12) (also, see col.4, lines 12-18). In regards to claim 9, Sturrock, also, describe in detail tilting means for the mini-column (col.2, lines 38-45).

6. As per claims 10-11, Sturrock teaches variable radial tilting of the mini-column (col. 2, lines 38-63), whereas "variable is given it's ordinary meaning of " the capability of assuming any one of a set of values".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sturrock, in view of US Pat No. 5376792 issued to Schamber et al. As previously discussed, Sturrock discloses the elements of claim 1, but does not teach the adjustability of said mini-column as in claims 2-3. However, it is held that adjustability is

not a patentable advance, and because there is an art-recognized need for the adjustment feature (i.e. the need for easy accessibility for maintenance purposes) in the prior art, the substitution of such a feature would have been obvious. Namely, Schamber states the art-recognized problem involving time-consuming maintenance techniques and further, discusses the serious drawbacks of such maintenance (see col.1, lines 24-46 of Schamber). Therefore, one of ordinary skill would have reasoned in light of Sturrock's disclosure and the available knowledge in the art to propose adding an adjustable means to Sturrock's invention.

9. Therefore, it follows that the connected limitations recited in claims 5-6 are likewise obvious. Namely, the recitation of the hermetically sealing of the opening between the main chamber and the mini-column, when withdrawn from the chamber flows from the proposal of adjustability in the Z-direction. Clearly, it is well within the level of the common skilled in the art to incorporate this limitation, if so desired.

10. Furthermore, the closing off or partitioning of sections of an apparatus from the atmosphere to conduct routine maintenance procedures is well known in the art. Therefore, it is held that said claims are obvious and can be easily motivated by the knowledge available in the art.

11. Claims 12-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Sturrock. In regards to claims 12, 13 and 15-17, Sturrock teaches a cantilever arm (22) in col. 4, lines 59-62 attached to the mini-column and a carriage. In light of applicant's disclosure, Sturrock does not teach a holding arm, which carries the mini-column nor does Sturrock teach a turntable stage. However, the functional recitation has not been

given patentable weight, because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth 35 U.S.C. 112, 6th paragraph, and must be supported in the claim.

12. As for the recitation of a turntable stage, it is held that a x-y stage is 360 rotatable and therefore can be characterized as a turntable stage. It is not fully understood the distinction the applicant intended in his disclosure. Nevertheless, the x-y stage and turntable stage are considered art-recognized equivalents and the selection of either is well within the level of one skilled in the art. Furthermore, the usage a so-called "turntable stage" as prescribed in applicant's disclosure would be considered a result-effective variable. Therefore, the substitution of a turntable stage in Sturrock can be reasoned from the available knowledge in the art.

13. Of claim 13, Sturrock teaches the capability of radial motion, thereby Sturrock teaches a radial pivot (col. 2, lines 44-48).

14. As per claims 18-26, as discussed Sturrock discloses claimed invention except for the teaching of a plurality of mini-columns. It would have been obvious to one skilled in the art at the time the invention was made to incorporate more than one mini-column, since it is held that mere duplication of the essential working parts of a device involves only routine skill in the art.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on 7:00am-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Arroyo can be reached on 703-308-4782. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and for after Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf
January 9, 2001


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